

CHANGES IN FRUIT TREE NUMBERS AND  
BERRY ACREAGE IN 1971, 1972 AND  
1973 AND COMPARISONS WITH  
1968

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An analysis of sample surveys mailed with the spring Ohio Horticultural Society Newsletters reveals some marked changes in the composition of Ohio fruit plantings. A total of 24 mail questionnaires were returned in 1972 and 79 in 1973. Apple tree numbers reported by those responding in 1972 were equal to 11 percent of the 1968 Ohio Tree Fruit Survey while returns in 1973 equalled 19 percent.

Neither the orchards in the 1972 nor the 1973 surveys were typical of those in the 1968 Ohio Tree Fruit Survey. The 1972 orchard survey reports had about 64 percent as many dwarf and semi-dwarf as standard trees and the 1973 survey had about 79 percent as many, while the 1968 tree survey had only about 23 percent as many dwarf and semi-dwarf as standard. While it is certain that the planting of dwarf and semi-dwarf trees has been going on at a high rate since 1968, it is unlikely that the makeup of the average Ohio apple orchard has changed to the extent indicated by these figures. It is more likely that the orchards of growers responding to the survey are somewhat more progressive than the average and are changing more rapidly. One indication of this is the fact that for orchards of over

2500 trees only 47 percent of bearing trees were on standard rootstock while for those under 2500 trees about 70 percent were planted on standard stock.

Peach trees reported by the growers in both the 1972 and the 1973 surveys were much less important compared with apples than in the 1968 tree survey. Reported plantings exceeded removals in both sample years, in 1971/72 by 5364 to 2495 and in 1972/73 by 2170 to 2075. In the 1973 survey, it appeared that peach tree numbers for large apple growers with peach orchards were remaining about constant while plantings by some specialized peach orchardists were increasing quite rapidly. About two-thirds of the plantings reported were by growers who had less than 100 apple trees.

Plantings of 397 nectarine trees were more than twice the number of bearing trees reported in the orchards of those who were surveyed.

Tart cherry tree numbers declined slightly during the 1971-1972-1973 period while sweet cherry tree numbers increased. Fewer cherry trees were reported in the 1973 than in the 1972 survey. Most of those reported were in orchards of growers with no apple trees.

Reported berry plantings in 1973 were much above those for 1972.

One factor not measured in a survey of this type is the abandonment of complete orchards. During the 1971-73 period some orchards were abandoned, at least temporarily, because of low returns, real estate value, labor problems or personal reasons. The survey method used in this study cannot allow for such changes since it depends on operating orchardists and the more public spirited of these. Consequently, these results should be viewed as indicative of changes being made in orchard composition by a group of orchardists who probably are more forward looking than the average. Here is what the data appear to show.

1. A slow but significant decline in tree numbers on standard rootstock.

2. A rapid increase in apple trees with dwarf and semi-dwarf rootstock. This trend has gone further in the larger orchards where there are now more trees on dwarf and semi-dwarf than standard rootstock. On the average, about five dwarf or semi-dwarf trees were added in 1971 for each removal of a tree on standard rootstock. In 1972 only 1.3 dwarf or semi-dwarf was added for each standard tree removed and in 1973 about 2.5 dwarf and semi-dwarf was added for each removal of a standard tree. During 1972 and 1973 there has been a net decrease in crop potential although tree numbers have increased.

3. A further large increase in plantings over removals for the Delicious cultivar, with substantial increases for Golden Delicious, Jonathan, Melrose, summer varieties and other. The excess in Delicious plantings over other cultivars was greater among the larger than the smaller orchards.

4. A substantial decline in numbers of Stayman Winesap, Rome Beauty and McIntosh cultivars occurred in the 1971-73 period. Removals of Rome Beauty cultivars were highest among the larger growers.

5. Peach tree plantings exceeded removals each sample year. Nectarine plantings were more than twice the reported bearing tree numbers.

6. Peach tree numbers compared with apples were much lower (one-third to one-half) in the 1972 and 1973 surveys than in the 1968 tree survey.

7. Sweet cherry plantings were greater than tree removals while tart cherry removals exceeded plantings during the 1971-73 period.

8. The reported planting of 48 acres of strawberries in 1973 by growers who had 80 acres of bearing strawberries would seem to indicate either a decline in 1974 harvested acreage or an increase in second year harvest or both. However, these same growers reported planting only 36 acres in 1972.

The 1972 survey respondents reported 17.2 acres of bearing strawberries compared with 16.1 acres planted in that season and 6.2 acres planted in 1971.

TABLE 1  
 SAMPLE SIZE COMPARED WITH 1968 OHIO FRUIT TREE CENSUS,  
 1972 AND 1973 MAIL SURVEYS, OHIO

Rootstock	Trees 4 Years and Older 1968 (No.)	Sample May 1972* (No.)	Sample May 1973* (No.)	Sample as Percent of 1968 Bearing Tree Numbers	
				1972 %	1973 %
<u>Apples</u>					
Total All	508,297	55,081	98,217	10.8	19.3
Standard	411,737	33,610	53,931	8.2	13.1
Dwarf & Semi	(96,560)	(21,471)	(44,286)	(22.2)	(45.9)
--Spur	39,618	13,426	20,575	33.9	51.9
--Other	56,942	8,045	23,711	14.1	41.6
<u>Other Fruit</u>					
Peaches	238,244	13,949	15,033	5.9	6.3
Cherries					
Tart	29,824	4,243	4,008	14.2	13.4
Sweet	3,931	1,723	1,304	43.8	33.2

\*Number of respondents, 1972 -- 24 growers; 1973 -- 79 growers.

TABLE 2  
SUMMARY OF APPLE PLANTINGS AND REMOVALS  
BY ROOTSTOCK, 1971, 1972 AND 1973

Rootstock	1971	1972	1973
	(Number Trees Net Change During Year)		
Standard	-1296	-1662	-998
Dwarf & Semi Dwarf			
Spur	2518	1065	1237
Other	4064	1040	1236
	(Change as Percent of Reported Bearing Trees)		
Standard	-3.9	-3.1	-1.9
Dwarf & Semi Dwarf			
Spur	18.8	5.2	6.0
Other	50.5	4.4	5.2

TABLE 3  
APPLE TREE NUMBERS BY ROOTSTOCK, BY ORCHARD SIZE,  
AND RATIO DWARF TO STANDARD STOCK, 1972 AND 1973  
79 OHIO FRUIT GROWERS

Orchard Size	Number Reporting	Number & Type, May 1973			Ratio Dwarf
		Standard	Dwarf Stock		Stock to
			Spur	Other	Standard
2500 or More					
Bearing Trees	10	30,285	14,493	19,130	1.11
1500-2499	12	14,388	3,568	2,347	0.41
500-1499	13	4,850	1,495	1,440	0.61
100-499	31	4,558	1,019	794	0.40
Under 100	9	0	0	0	0.00
No Tree Fruits	4	0	0	0	0.00
Total	79	53,931	20,575	23,711	0.82

TABLE 4

	1972			1973			Total (1972-73)		
	Dwarf Stock			Dwarf Stock			Dwarf Stock		
Orchard Size	Std.	Spur	Other	Std.	Spur	Other	Std.	Spur	Other
	- - - - - (number of trees) - - - - -								
* * * * * APPLE TREE REMOVAL * * * * *									
2500 or More	1120	--	--	500	--	--	1620	--	--
1500-2499	59	2	12	87	3	22	146	5	34
500-1499	115	--	4	144	--	12	259	--	16
100- 499	280	7	--	427	6	--	707	13	--
Under 100	160	--	--	15	--	--	175	--	--
Total	1734	9	16	1173	9	34	2907	18	50
* * * * * APPLE TREES PLANTED * * * * *									
2500 or More	--	900	600	70	700	250	70	1600	850
1500-2499	50	100	279	50	150	500	100	250	779
500-1499	10	74	87	15	240	231	25	314	318
100- 499	12	--	--	40	17	59	52	17	59
Under 100	--	--	90	--	139	230	--	139	320
Total	72	1074	1056	175	1246	1270	247	2320	2326
* * * * * NET CHANGE * * * * *									
	- - (percent) - -								
2500 or More	30825	14493	19130	-1550	1600	850	-5.0	11.0	4.4
1500-2499	14388	3568	2347	-46	245	745	-0.3	6.9	31.7
500-1499	4850	1495	1440	-234	314	302	-4.8	21.0	21.0
100- 499	4558	1019	794	-655	4	59	-14.4	0.4	7.4
Under 100	0	0	0	-175	139	320	#	#	#

#No bearing trees in 1973.



TABLE 5  
SUMMARY OF REPORTED NET CHANGE IN 1972 AND 1973  
APPLE TREE SURVEYS, BY CULTIVAR

Cultivar	Net Change	
	1972 Survey (1971-72)	1973 Survey (1972-73)
	----- (number of trees) -----	
Delicious	2,651	1,347
Golden Delicious	824	548
Jonathan	536	284
Melrose	698	44
McIntosh	-225	98
Cortland	49	-13
Rome Beauty	423	-591
Stayman-Winesap	83	-418
Summer Varieties	452	178
Other	-25	554
Unknown	1,767	-39
Total	7,215	1,992

TABLE 6  
APPLE TREE REMOVALS AND PLANTINGS BY CULTIVAR  
1972 AND 1973

	Removals		Plantings		Net Change
	1972	1973	1972	1973	1972 & 73 Totals
	----- (n u m b e r s) -----				
Delicious	404	147	1087	811	1347
Golden Delicious	11	63	180	442	548
Jonathan	164	205	286	367	284
McIntosh	61	74	54	179	98
Melrose	3	5	1	51	44
Cortland	2	23	2	10	-13
Rome Beauty	550	236	6	189	-591
Stayman-Winesap	166	288	1	35	-418
Summer Varieties	97	65	108	232	178
Other	134	44	427	305	554
Unknown	162	27	50	100	-39
Total	1754	1177	2202	2721	1992

TABLE 7  
APPLE TREES REMOVED, BY CULTIVAR  
AND ORCHARD SIZE  
1972 AND 1973

	Orchard Size -- Number of Trees					Total
	2,500	1,500	500	100	100-	
***** 1972 *****						
Rome Beauty	450	11	23	66	--	550
Delicious	250	41	23	90	--	404
Stayman-Winesap	100	1	18	47	--	166
Jonathan	130	1	30	3	--	164
McIntosh	60	--	--	1	--	61
Golden Delicious	5	2	1	3	--	11
Cortland	--	--	--	2	--	2
Melrose	--	2	--	1	--	3
Other	50	15	15	54	--	134
Summer Varieties	80	--	5	12	--	97
Unknown	--	--	--	2	160	162
Total	1125	73	115	281	160	1754
***** 1973 *****						
Rome Beauty	150	10	--	76	--	236
Delicious	100	6	--	41	--	147
Stayman-Winesap	150	20	--	118	--	288
Jonathan	75	2	68	60	--	205
McIntosh	25	3	--	46	--	74
Golden Delicious	--	52	--	11	--	63
Cortland	--	--	--	23	--	23
Melrose	--	1	--	4	--	5
Other	--	8	18	18	--	44
Summer Varieties	--	--	38	27	--	65
Unknown	--	10	--	2	15	27
Total	500	112	124	426	15	1177

TABLE 8  
APPLE TREES PLANTED, BY CULTIVAR  
AND ORCHARD SIZE  
1972 AND 1973

	Orchard Size -- Number of Trees					
	2,500	1,500	500	100	100-	Total
***** 1972*****						
Delicious	850	145	90	2	--	1087
Jonathan	150	110	25	1	--	286
Golden Delicious	100	42	36	2	--	180
McIntosh	50	3	--	1	--	54
Rome Beauty	--	5	--	1	--	6
Melrose	--	--	--	1	--	1
Stayman-Winesap	--	--	--	1	--	1
Cortland	--	--	--	2	--	2
Other	267	60	10	--	90	427
Summer Varieties	33	64	10	1	--	108
Unknown	50	--	--	--	--	50
Total	1500	429	171	12	90	2202
***** 1973*****						
Delicious	450	200	138	13	10	811
Jonathan	100	125	119	23	--	367
Golden Delicious	150	23	95	15	159	442
McIntosh	--	175	--	4	--	179
Rome Beauty	150	2	26	11	--	189
Melrose	--	50	--	1	--	51
Stayman-Winesap	--	10	--	25	--	35
Cortland	--	--	--	10	--	10
Other	--	75	22	8	200	305
Summer Varieties	70	40	86	6	30	232
Unknown	100	--	--	--	--	100
Total	1020	700	486	116	399	2721

TABLE 9  
BEARING TREES AND CHANGES IN TREE NUMBERS,  
75 OHIO FRUIT GROWERS, 1972 AND 1973

Orchard Size (number)	Bearing Trees May, 1973 (no.)	Trees Planted 1972/73 (no.)	Trees Removed 1972/73 (no.)	Net Change As % of Bearing Trees	
				(no.)	(percent)
***** APPLES *****					
2500+					
Standard	30,285	70	1620	-1550	-5.1
Dwarf					
Spur	14,493	1600	--	1600	11.0
Other	19,130	850	--	850	4.4
Under 2500					
Standard	23,796	177	1287	-1110	-4.7
Dwarf					
Spur	6,082	720	18	702	11.5
Other	4,581	1476	50	1426	31.1
Total					
Standard	53,931	247	2907	-2660	-4.9
Dwarf					
Spur	20,575	2320	18	2302	11.2
Other	23,711	2326	50	2276	9.6
***** PEARS *****					
2500	2150	100	--	100	4.7
1500	766	1	1	0	--
500	137	--	--	--	--
100	289	104	14	90	31.1
Under 100	200	--	8	- 8	-4.0
Total	3542	205	23	182	5.1
***** PEACHES *****					
2500	9220	500	515	-15	-0.2
1500	395	80	210	-130	-32.9
500	860	70	245	-175	-20.3
100	2654	195	414	-219	-8.3
Under 100	1904	1325	691	634	33.3
Total	15033	2170	2075	95	0.6

(Continued)

TABLE 9

BEARING TREES AND CHANGES IN TREE NUMBERS  
75 OHIO FRUIT GROWERS, 1972 AND 1973  
(Continued)

Orchard Size (no.)	Bearing Trees May, 1973 (no.)	Trees Planted 1972/73 (no.)	Trees Removed 1972/73 (no.)	Net Change	
				As % of Bearing Trees (no.)	(percent)
***** NECTARINES *****					
2500	110	--	--	--	--
1500	2	--	2	-2	-100.0
500	25	--	10	-10	-40.0
100	32	12	6	6	18.8
Under 100	0	385	0	385	--
Total	169	397	18	379	224.3
***** CHERRIES, TART *****					
2500	215	0	202	-202	-94.0
1500	5	0	0	0	--
500	30	12	2	10	33.3
100	158	3	134	-13	-82.9
Under 100	3600	100	50	50	1.4
Total	4008	115	388	-273	-6.8
***** CHERRIES, SWEET *****					
2500	40	--	--	--	--
1500	27	4	3	1	3.7
500	20	10	4	6	30.0
100	17	20	6	14	82.4
Under 100	1304	134	63	71	5.4
Total	1408	168	76	92	6.5
***** BERRIES *****					
	Bearing Acreage	Acreage Planted			
		1972	1973		
Strawberries	80	36	48		
Raspberries, Red	7.2	--	4		
Black	15.8	--	3		
Blackberries	.2	--	--		
Total	103.2	36	55		